WHAT IS CLAIMED:

Sub A27

1. A method of communicating a data message via a transceiver using spread spectrum communications, each byte of the data message being communicated a predetermined number of times over a sequence of data channels by a transmitter, the method comprising:

transmitting a preamble over a predetermined number of preamble channels; and

transmitting the data message by communicating groups of data bytes that each comprise a subset of the data message over the predetermined sequence of data channels,

wherein a number of bytes that comprises each group of data bytes is determined in accordance with a number of channels in the sequence of data channels and the predetermined number of times each byte of the data messages is to be transmitted.

2. The method of claim 1, wherein the preamble is transmitted over a predetermined number of preamble channels for a period of time sufficient in duration such that a receiver may receive the preamble.

3. The method of claim 2, wherein the preamble is concluded with a unique stop character and wherein the preamble is utilized to develop bit timing and hop frequency.

4. The method of claim 2, further comprising investigating, at the receiver, the predetermined number of preamble channels to search for the preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels.

5. The method of claim 1, wherein the number of bytes that comprises each group of data bytes is such that a receiver can receive the entire data message when at least one of the data channels is blocked by interference.

6. The method of claim 1, wherein transmitting a preamble over a preamble channel further comprises transmitting a redundant preamble over a second preamble channel.

7. The method of claim 6, further comprising:

investigating, at the receiver, the preamble channel; and

upon receiving a first preamble, investigating the second preamble channel to receive the redundant preamble.

8. The method of claim 7, wherein if the receiver does not receive the second preamble, the method further comprising determining a hop frequency based on the first preamble to receive the data message over the predetermined sequence of data channels.

9. The method of claim 6, wherein when the receiver receives a unique stop character associated with the second preamble, the method further comprising determining a hop frequency to receive the data message over the predetermined sequence of data channels.

10. The method of claim 6, wherein the preamble and second preamble are transmitted over a predetermined number of preamble channels for a period of time sufficient in duration such that a receiver may receive the preamble and second preamble.

11. The method of claim 10, further comprising, investigating, at a receiver, the predetermined number of preamble channels to search for the preamble and the second preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels.

12. The method of claim 1, wherein the data message comprise utility metering information, and wherein the transceiver resides in utility metering equipment.

13. A transceiver for use in a frequency hopping spread spectrum communication system, comprising:

a microcontroller;

a transmitter comprising a voltage controlled frequency generator and a power amplifier;

a receiver comprising an amplifier, a mixer, an IF amplifier, a demodulator, and a data slicer,

wherein when the transceiver is transmitting, the transmitter communicates a preamble over a predetermined number of preamble channels, and thereafter communicate groups of data bytes that each comprise a subset of the data message over a predetermined sequence of data channels,

wherein when the transceiver is receiving, the receiver investigates the predetermined number of preamble channels to search for the preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels, and

wherein a number of bytes that comprises each group of data bytes is determined in accordance with a number of channels in the sequence of data channels and the predetermined number of times each byte of the data message is to be transmitted.

14. The apparatus of claim 13, wherein the number of bytes that comprises each group of data bytes is such that a receiver can receive the entire data message when at least one of the data channels is blocked by interference.

15. The apparatus of claim 13, wherein transmitting a preamble over a preamble channel comprises transmitting a redundant preamble over a second preamble channel.

16. The apparatus of claim 15, wherein a receiver investigates the preamble channel, and upon receiving a first preamble, the receiver investigates the second preamble channel to receive the redundant preamble.

17. The apparatus of claim 15, wherein if the receiver does not receive the second preamble, the receiver determines a hop frequency based on the first preamble to receive the data message over the predetermined sequence of data channels.

18. The apparatus of claim 15, wherein the preamble and second preamble are transmitted over a predetermined number of preamble channels for a period of time sufficient in duration such that a receiver may receive the preamble and second preamble.

19. The apparatus of claim 15, wherein a receiver investigates the predetermined number of preamble channels to search for the preamble and the second preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels.

20. The apparatus of claim 13, wherein the data message comprises utility metering information, and wherein the transceiver resides in utility metering equipment.